Energy, Environment and Technology Interim Committee
Joint Finance-Appropriations Committee Room
Statehouse
Boise, Idaho
November 15, 2005 9:30 a.m.

The meeting was called to order by Cochairman Representative George Eskridge at 9:30 a.m. Other members present were Cochairman Senator Brent Hill, Senator Patti Anne Lodge, Senator Tom Gannon, Senator Curt McKenzie, Senator Gerry Sweet, Senator Elliot Werk, Representative Steve Smylie, Representative Joe Cannon, Representative Ken Andrus, Representative Bob Nonini and ad hoc member Representative Bert Stevenson. Senator Clint Stennett, Representative Maxine Bell and Representative Elaine Smith were absent and excused. Legislative Services Office staff members present were Mike Nugent and Toni Hobbs.

Others present included David Byrnes and Brian Silverstein, Bonneville Power Administration; Neil Parekh, Pacific Northwest Economic Region; Randy Lobb and Ron Law, Idaho Public Utilities Commission; Representative Sharon Block, District 24; Dan Larkin, IFP; Roger Batt, IEOSA/HCE; Russ Hendricks, Farm Bureau; Neil Colwell, Avista Corp; Representative Eric Anderson, District 1; Ron Williams, Idaho Consumer Owned Utilities Association/Mountain View Power; Dale Atkinson, Aerobic Treatment Unit Industry/Jet Distributer; Dar Olberding, Ridgeline Energy; Greg Panter and Kip Sikes, Idaho Power; David Hawk, J.R. Simplot Co.; Lauren McKan, Idaho Conservation League; Ken Miller, Northwest Energy Coalition; Sarah Bigger, Boise State University; Glen Pond, Utah Power; Pike Teinert, Energy Strategies Group; Bob Hoppie, Idaho Energy Division; Steve Thomas, Moffatt Thomas; Lou Riepl, INL-Battelle Energy Alliance and Brenda Tominaga, Idaho Irrigation Pumpers.

After opening remarks from the cochairmen, Representative Smylie moved that the minutes from the last meeting be approved. Senator Hill seconded and the minutes were approved unanimously.

Ms. Kate Burke, Energy Policy Specialist, National Council of State Legislators, was introduced to give a presentation on energy policy activities across the country and Idaho's energy strategy. This complete presentation is available at the Legislative Services Office. She commented that if the committee remembers nothing else, they need to remember:

- We now have competition for world energy supplies from China and India.
- This competition affects our supplies and our prices.
- We need to think strategically about how we use and produce energy now.

Ms. Burke said the world has a lot of energy but the question is whether it is in the right places. She said the demand is growing so fast that the range between what we do have and demand is shrinking. Energy needs to be able to be transported where it is most needed.

She said the U.S., by the year 2015, will import 65% of its oil and 30% of its natural gas. Europe will import 80% oil and 80% gas. British Petroleum estimates that the worldwide investment to meet worldwide demand by this time will be $2 trillion. The U.S. now imports 11 million barrels per day of oil from 57 different countries.

Ms. Burke explained that since energy is so vital to everyday life, we need to make sure we are not too dependent on energy resources that are halfway across the globe. The world population today is 6.3 billion and it grows by 10,000 people each hour. By 2015, the world population will reach 7.2 billion people. The Chinese economy has grown by a factor of four in the last 20 years. China is now the second-largest consumer in the world (the U.S. is first).

Ms. Burke's presentation includes a chart showing China's energy growth by fuel for the year 2003 increased 14% and is continuing to grow. She said as the Chinese economy grows and they buy more cars, their consumption of oil is going to grow and that will affect our market in the U.S.

Ms. Burke noted that the Chinese use about 6.5 million barrels a day of oil and that figure is supposed to double by 2020. India now consumes 2.2 million barrels per day and that is going to increase to 5.3 million barrels per day. The world is now using 81 million barrels per day total and by 2025 the U.S. is projected to use 28 million barrels of oil per day by 2025. She pointed out that as the economies of these other countries grow, our market will be affected.

Ms. Burke's presentation included a slide showing that the actual U.S. transportation oil consumption was rising up to the year 2000. The Energy Information Administration projected that would continue to grow. This chart also shows where that growth would be if the U.S. instituted CAFE standards. This chart shows projected oil production with the ANWR addition and automobile oil use.

Senator Gannon asked if the oil consumption projections anticipated the development of hybrid cars. **Ms. Burke** said no it just includes the CAFE standard increase. The use of hybrids would require a new base case scenario, and in her opinion the consumption would go down somewhat.
Ms. Burke said that oil and gas remain the primary energy sources but other sources such as biomass, nuclear and wind are growing rapidly. She said that coal and gas lead all power generation growth throughout the world. She noted that coal prices between 2003 and 2004 increased from under $40 to almost $80 per ton.

Ms. Burke went on to state that many older coal-fired power plants are being retired because they do not meet clean air regulations. These retirements are exceeding the rate of new construction, but coal continues to be used as an energy source at an increasing rate.

She said that no matter what anyone thinks of climate change, the industry and industry regulators are starting to factor the risk of future regulations into their plans. The following are some examples:

- **PacifiCorp** - multiple carbon scenarios, base case of $8 per ton of CO2 beginning in 2009.
- **Idaho Power** - multiple carbon scenarios, base case of $12.30 per ton of CO2 beginning in 2008.
- **Xcel/PSCo** - scenarios of $6 and $12 per ton of CO2 beginning in 2009.
- **PGE** - scenario of $10 per ton of CO2.
- **Avista** - of $1.32 - $11 per ton beginning in 2004.
- **California** - CPUC requires utilities to consider carbon costs at $8 - $25 per ton of CO2.

Ms. Burke said the more wells that are drilled the more likely it would seem there would be more natural gas being recovered but that is not true. Those well recoveries are actually being used faster because there is more and more demand.

She said that natural gas imports to North America are going to continue to grow even though there will be some growth from Alaska, liquified natural gas and unconventional sources. **Representative Stevenson** asked what are considered to be unconventional sources. **Ms. Burke** said those are sources that will be used in the future. She said she would get the specifics for the committee as a follow up. **Mr. David Hawk, J.R. Simplot Company,** commented that those sources include coal bed methane, gas hydrates and tight gas shales. **Ms. Burke** also stated that liquid natural gas (LNG) is a key solution. It is assumed that the federal government will be working closely with the states to get LNG facilities built.

Ms. Burke said that there are fewer refineries in existence than there were in the 1940s. This number is about 50% less. Production from those refineries is steady but our demand is growing. Some of the older refineries cannot produce fuels to meet the environmental requirements so more refined products are being imported. **Ms. Burke** stated that the U. S. has a lot of renewable resources. She commented that Idaho has excellent wind resource potential and good biomass resource potential.

Ms. Burke said that regarding electric generation, 20.19% comes from coal, natural gas is about 6%. Electric use is 4.13% residential, 4.12% commercial and 3.39% industrial. In response to a question about the 68.4% being lost, **Mr. Brian Silverstein, Bonneville Power Administration,** said he would assume these losses are from production; turning coal heat into energy and loss in the wires in the transmission and distribution system. He said wire losses would be about 10% to 15% and the rest would be production losses.

Ms. Burke said that energy efficiency is a big energy resource. In a meeting she attended in California it was stated that Californians, from residential energy efficiency programs, are actually saving about $1,000 per family.

Ms. Burke's presentation included several state case studies. In putting these case studies together they interviewed states that have energy policies and discussed the process they followed, the structure of the task force, the objectives for the policy, the topics they covered and how they measured their success and the results achieved. Some of the topics states are

addressing include petroleum, natural gas, coal, fuel diversity, transportation, economic development, coalbed methane, electricity reliability, security, transmission, net energy balance, imports vs. exports, energy efficiency and conservation, wind, biomass, ethanol, solar, oil and electric utilities.

Ms. Burke said that the objectives of these policies should be considered early in the process. Most objectives they encountered were centered around low-cost energy, environmental quality improvement, energy reliability and infrastructure modernization. More goals and objectives of these state energy policies include:

- Improve the public health and environmental quality
- Promote wise land use
- Ensure energy reliability and security
- Implement strategies supportive of a sound economy
- Develop an achievable, sustainable energy strategy
- Implement a strategy by which the state can lead by example
- Improve mobility of people and goods
- Provide low-cost, reliable and sustainable energy, produced in-state to the fullest extent possible
- Promote dependable, efficient and economical statewide energy systems capable of supporting the needs of the people
- Increase energy self-sufficiency where the ratio of indigenous to imported energy use is increased
- Reduce the ratio of energy consumption to economic activity
- Increase the use of cost-effective renewable resources
- Expand forested areas to ensure a future supply of wood fuel and reduce atmospheric carbon dioxide
- Maintain low-cost energy

These individual case studies include the states of Kentucky, Kansas, North Carolina, Wisconsin, Vermont, New York and California. These are available at the Legislative Services Office. This information also includes websites where each state plan can be viewed in its entirety.

Ms. Burke said the lessons learned from these states and the next steps to be taken include:

- Create a "guiding" or flexible policy
- Use legislation or executive orders to address specifics
- Develop policy (typically takes 3-24 months)
- Adopt specific goals that the recommendations in the policy will help to achieve
- Create a capacity for analysis
- Determine frequency of policy updates (~ 2 yrs.)
- Give the policy "teeth"

The general process should:

- Review state energy statistics and trends
- Involve state government leadership

- Consult national, state and local organizations and experts
- Use state agency expertise
- Involve the public
- Track progress

Senator Werk asked if any states are actually using their energy policies to provide guidance for energy planning or do they just sit on the shelf. **Ms. Burke** said some of that information is available in the report she distributed that includes the websites showing each state's energy policy. She said a lot of states are requiring use of the plan. In North Carolina, no proposal can go to the state energy office unless it points back to the North Carolina energy plan.

Senator Hill asked what the response has been from energy providers regarding these state energy plans. He said energy providers do not appear to be represented on many of these task forces. He also asked if the plans help with energy generation or do they cause additional regulation that hinders production. **Ms. Burke** in answer to his second question said both. In states where providers were involved, these policies worked better. Getting the providers involved early is helpful because it allows them to be part of the process and give necessary input to the implementation of the plan.

Representative Eskridge said he had heard that the Public Service Commissions, because of the volatility of gas prices and other uses of gas, are beginning to refuse or are discussing the option to refuse natural gas peaking plants in the rate base. **Ms. Burke** said that was not her field but that Christina Rewey in the NCSL office could probably answer that question.

Bob Hoppie, Idaho Department of Water Resources, was introduced to give an update of discussions taking place on Idaho energy policy in the Governor's office. **Mr. Hoppie** explained that due to the report to this committee in June regarding the age of Idaho's energy policy, they contacted the Governor's office to attempt to find out what direction to go. He said that in the last week **Idaho Department of Water Resources Director Karl Dreher** and staff from the Governor's Office have spent some time working on this. **Mr. Hoppie** said that Mr. Jim Yost from the Governor's Office is working on a revised Executive Order with the component to include updating the state energy plan.

Senator Hill asked for information regarding the procedure that will be followed to update the state energy plan. **Mr. Hoppie** said he did not have that information but would assume there will be a draft Executive Order that will be reviewed before the final version is approved.

Senator Hill asked what role this interim committee should play in the development of a state energy plan. He said they do not want to be in conflict or duplicate what is being done by the Governor's office. **Mr. Hoppie** said any contact the committee has with the Governor's office on this issue would be appreciated.

Representative Smylie asked if it would be appropriate to make a motion that the committee be in contact with the Governor's office on how to approach the situation. In his opinion it would

be better for everyone to work together. **Representative Stevenson** said in the past, committee members have made such motions that the cochairs contact the Governor's office to relay messages and so on, so he thought a motion would be in order. **Senator Gannon** asked if those motions made in the past have produced any results. **Senator Hill** said yes. The last time had to do with renewable energy tax credits that resulted in legislation.

Representative Smylie commented how old the state energy plan is and how it is not utilized that much. He said he would hope if the committee spends time updating the plan, it will actually be utilized.

Representative Eskridge stated that he has concerns about our existing policy and how natural gas is being used for generation versus other uses. He also voiced concerns about the depletion of the state hydro resource and how to meet the needs of our state citizens in terms of providing the energy resources necessary to fuel our economy and provide for their safety and well-being. In his opinion this committee and other state entities have a responsibility to determine what direction is best for the state of Idaho.

Senator Werk moved that the committee recommend that the cochairmen approach the Governor's office to offer assistance and impetus in updating the state energy policy. Senator Gannon seconded the motion. The motion was approved unanimously by voice vote.

Mr. Brian Silverstein, Vice President, Operations and Planning, Bonneville Power Administration (BPA), was introduced to discuss transmission and increasing access to the grid. His complete presentation is available at the Legislative Services Office.

Mr. Silverstein said the most obvious reason for a transmission system is to move energy from where it is produced to where it is consumed. He said Idaho consumes a fair amount of energy that is produced in the coalfields of Wyoming. The major load centers in Idaho are remote from those resources and transmission allows that power to be moved.

Mr. Silverstein said another important characteristic of the transmission system is reliability because sometimes plants go down or are not available. This requires that extra generation be available. He said it would be very expensive for each load center to have its own reserves so the electric system shares that capability, and transmission is what allows the power to be moved from one place to the other.

The third purpose of transmission is economics. Sometimes energy can be produced more cheaply in one region than in another, and transmission allows that energy to be moved. He gave the example of Idaho's hydro resource that has tremendous production during the spring runoff and transmission allows us to ship that power to the California market.

Mr. Silverstein said that of the five cents per kilowatt hour a consumer pays on their energy bill, less than 10% goes to transmission. He said this is a relatively small part but at the same time a

vital part for a reliable and economic power supply for consumers. He said in his opinion the industry has been underspending in transmission for several decades.

In response to a question from **Senator Gannon** regarding distribution, **Mr. Silverstein** said it refers to the wires that run down the street on a pole or underground. This is a very large part of the cost of the electric power system and is referred to as the last mile between the utility and the consumer's home, farm or commercial building. **Senator Gannon** clarified that power includes not only facilities that generate, but the overhead of the utilities as well. **Mr. Silverstein** said yes, power means the production of energy, mortgage payments, the fuel, the operations and the maintenance costs for the production of the energy. He noted that power, distribution and transmission might not be owned by the same company.

Mr. Silverstein showed a map of the interconnection system in the U.S. He explained that this system is divided into three systems; the Eastern Connection, the Western Connection and the Texas Connection. He explained that the three systems operate electrically isolated from one another. This provides some protection with regard to blackouts such as the Northeast blackout in 2003. This is also very important with the setting and enforcement of reliability standards. This is because recently, legislation regarding reliability allows significant deference to reliability councils that operate across an entire interconnect. The East has eight different reliability councils but there is only one in the West and one in Texas, giving us significant deference in this. He said there is actually a rulemaking process taking place today by FERC that has been of substantial interest to the West.

His presentation shows the combined transmission grid in the Northwest. This map shows that BPA is a major player in transmission in this area with about 3/4 of the transmission in the service territory. He said in looking at a larger picture of the Northwest, BPA only has about one-half of the transmission. He said all of this transmission operates together as an interconnected grid.

Mr. Silverstein gave the following information regarding BPA's transmission:

- BPA owns and operates 75% of the Northwest's high-voltage electric grid.
- 300,000 square miles in OR, WA, ID, MT and sections of WY, NV, UT and CA.
- 15,000 miles of transmission line, 285 substations.
- Peak load of about 30,000 megawatts.
- $650 million a year in revenues.
- BPA voluntarily operates under FERC's Open Access Transmission Tariff.

Mr. Silverstein went on to discuss how to increase access to the transmission grid. He said as the committee thinks about an energy policy, transmission needs to be an important component of that. This is because the state of California has standards for resource adequacy. In other words the utility must demonstrate that it has adequate resources to meet its loads; supply side (coal, natural gas, nuclear generation) or demand side (conservation). The regulating utilities in the state developed a plan and demonstrated adequacy with only one problem: some of the resources were located in Arizona and there is not sufficient transmission to move that

generation to their consumers. They can demonstrate on paper that they are resource adequate but Southern California still has rotating blackouts because they cannot deliver that power where it needs to be.

Mr. Silverstein went on to discuss the following issues that are important to increasing access to the grid.

Expand the pie:
His presentation included a map showing network constraints to transmission that existed in the Northwest in 1994 and 2001. He said in 1994 the previous decade had seen significant investment in transmission so everything looked pretty good. In 2001 there were more constraints. This was due to the fact that no more significant investments were made to transmission. **Mr. Silverstein** said the Northwest went fifteen years without investing in transmission. During this same time period there was robust economic growth; electric consumption was growing at 2% a year, the wholesale marketplace opened up, and the electric grid was being used in ways that had not been anticipated. There were also significant changes in hydro operations due to fish constraints that forced spill at certain times of the year and generation at others. The transmission grid was not designed to tolerate that.

To deal with that in 2001 BPA recognized the problem and developed an infrastructure program that focused on:
- Maintaining reliable transmission service to population centers.
- Restoring or enhancing transfer capability across key paths.
- Providing a margin so the system can be maintained.
- Evaluating and investing in nonwire alternatives.

Infrastructure accomplishments include:
- First major line construction in the Northwest since 1987.
- Investment of more than $1 billion over the last four years.
- Two 500-KV lines completed in Washington state, one nearly done.
  - Kangley – Echo lake
  - Coulee – Bell
  - Schultz – Wautoma

Mr. Silverstein said this is important to Idaho because some of these lines allow the movement of power across the state to the load centers. He said this is very important to the economies of all regions because power is exchanged back and forth.

- Modernization of the nation's largest direct current terminal (Celilo Converter - 3100 MW).
- Several projects to upgrade local load service.

Idaho projects include:
- Lower Valley Reinforcement – 2008
- Northern Idaho Reinforcement (Libby-Bonners) – 2012

- Teton Shunt Cap Switcher Replacement – 2004
- Targhee Circuit Breaker Installation – 2005
- Madison Shunt Cap Replacement – 2007
- Targhee–Drummond 115 kV Line Upgrade – 2009

Mr. Silverstein presented a map showing the status of BPA infrastructure additions. He pointed out that there were a number of facilities that BPA anticipated building in 2000-2001 driven by proposed new generation including gas turbines and wind projects. In one project BPA had already done all of the environmental analysis, detail design and put footings in the river; the only thing missing was someone to sign up to take service and finance that transmission facility. Funding is one of the challenges they face.

Representative Eskridge asked since the transmission facility is needed and the generation exists, why are we not getting the investment into construction. **Mr. Silverstein** said in some cases such as between the border of Washington and Oregon, there are some small wind projects coming online. He said the really large wind plants are yet to come. The reason for this is that the Northwest as a whole is actually in a small surplus condition. **Mr. Silverstein** said this will probably disappear in about four or five years. The question of who will provide the financing still exists. The basic model is that BPA finances on their limited borrowing authority from the U.S. Treasury for those facilities needed to serve the load centers. Their policy is the same as every other utility in the U.S. and that is, if someone who is developing new generation needs transmission facilities, they must provide the financing up front. In exchange for that they get a credit. One reason for that is simply the cost of borrowing, and another is for risk management purposes. By requiring this up front, existing ratepayers do not take the risk of a generation project failing.

Representative Eskridge asked whether this surplus is year round or seasonal. **Mr. Silverstein** said that it is average energy throughout the year. He said this will need to be adjusted when the final biological opinion is received from Judge Redden and when it is seen what that will do to the energy production capability of the hydro system.

Representative Eskridge said coal plants and the like take several years to build. He asked if the Northwest is ahead or on schedule for load growth. **Mr. Silverstein** said in his opinion we are right on the cusp. He thinks people need to start moving on these plants.

Mr. Silverstein showed a map showing the network constraints today. There has been some investment made in transmission since 2001 and that has relieved some of the constraints that allow power into the western part of Idaho.

Mr. Silverstein said that it is important, before making huge investments in transmission facilities that also have environmental consequences, that all opportunities need to be looked at including nonwire solutions such as demand response, energy efficiency, distributed generation and appropriately sited large generation. Objectives of looking at these options are to find least cost solutions to transmission limitations and to provide equivalent reliability to a transmission

fix. The benefits of transmission deferral include the time value of money and the option value of delaying costly investments.

Mr. Silverstein said there are a number of challenges involved. Some are technological, reliability-based and institutional. By institutional he said he means who benefits and who pays for new measures. Adding a new measure that reduces consumption reduces the amount of energy needed and can defer the need for distribution and/or transmission. All of these players need to share in the costs and benefits of developing these new measures.

Senator Hill asked what technological advances are occurring to help reduce the energy loss that happens through production and transmission. **Mr. Silverstein** said the important thing to keep in mind is that the largest component of loss is in the production of electricity. Converting energy in one form such as falling water or burning coal or gas into electricity is the largest component of loss. He said the technology continues to advance. This is why there are more gas turbines being built in combined cycle. He said one way to move that further is combined heat and power technologies. He said he does not understand why combined heat and power has not moved further. He said that technology is hard to find but there are some of these facilities in Portland. Larger conductors and more effective transformers also help reduce power loss. He noted that BPA has some of the lowest loss transmission grids because they invest in large wires to reduce those losses. Their losses average only about 1%.

Mr. Silverstein said that BPA has invested almost $5 billion in transmission facilities that are only used on average 65% of the time because that is what our electrical consumption is. He said they are looking for ways to increase utilization. In his opinion more can be squeezed out of the system and still maintain reliability. One of the challenges is that increased utilization does affect the ability to move power when it needs to be moved. There is some economic risk in that. Traditionally people have expected that when a power plant is built, transmission will be firm or guaranteed to be there. The development of wind generation that only operates about 1/3 of the time, requires finding a better way to match up the characteristics of the generation and the transmission system.

The last concept **Mr. Silverstein** discussed was doing a better job of planning. He said that the opening of the wholesale market and deregulation has broken down the connection between planning for generation and planning for transmission. This operates as one big machine. He is proposing a coordinated planning cycle that would link together each individual utility's resource planning with regionwide transmission planning. He said generally each utility does its own resource plan and in his opinion there needs to be a way to put those together. He said this is even more important today because some of the resources that people are interested in are very remote from the load centers and are very large. This means there will also be a need to build large transmission facilities. According to **Mr. Silverstein** the only way that will happen is if a number of people band together to make these investments.

The integrated planning concept for transmission **Mr. Silverstein** is proposing includes transmission open season where everyone submits their requests for transmission. This will be

analyzed by the regional transmission organization that will offer commitments or contracts with people. Once everyone has signed a contract and paid their money, there will be an integrated transmission plan. He said this does not require utilities to change the way they do their generation plans subject to their state laws. What it does require is a single organization to do the transmission planning, and for the resource planning and transmission planning to be synchronized across the Northwest so that transmission can be planned together. He said this will take a lot of discussion among the investor-owned utilities, consumer-owned utilities, state regulators, legislators and this new transmission organization.

Representative Smylie said that resource planning is usually done by utilities. He asked if this is suggesting that utilities and all other stakeholders would need to be involved in transmission planning. **Mr. Silverstein** said it is necessary to have a single transmission planning authority because transmission facilities cross state boundaries. He said that BPA has requests for transmission service from coal developers in Montana. These developers also have requests for transmission with Avista and Northwestern Energy. In requesting transmission they have to get on a waiting list. He said there are different positions in the waiting list for all three and BPA does not know how to process them or what to consider first.

Mr. Silverstein said another compelling reason for a single transmission authority is that some of these major generation development proposals for wind, coal and oil sand are so big that no one utility will be able to build it on its own.

Mr. Silverstein said there is a fundamental difference of opinion among the stakeholders of whether a new organization should be formed or if it should be done through existing institutions. This battle has caused the collapse of the conversation. Today some of the investor- owned utilities (Idaho Power, Northwestern Energy, PacifiCorp, Portland General Electric and BC Hydro) have agreed on one plan and the other parties have not been able to act. BPA made a proposal called Convergence to try to bring these two groups together, and that was rejected.

Mr. Silverstein said he and the BPA Administrator believe very strongly that the way we manage transmission today is not acceptable. Common ground has to be found among the stakeholders.

Representative Block said that there are seven new power plants being proposed for Southern Idaho and the transmission is owned by Idaho Power. She asked if there was a transmission organization would they decide who gets the available transmission capacity. **Mr. Silverstein** said it is always a challenge when generation is developed to build transmission facilities. He said this new transmission authority would make recommendations for transmission but it would not actually build. The utilities would actually build the transmission. He said the most fundamental concept in looking at building transmission facilities is that existing rights to transmission must be protected. This is recognized by FERC.

Representative Block said Idaho Power is regulated by the PUC and other plants are not

regulated. These plants' power will be sold out of state while Idaho Power remains here. She said in a transmission organization the PUC will represent Idaho Power but asked who the other plants will be responsible to. **Mr. Silverstein** said regulation of the power plant is a different issue. If they are selling power into the wholesale marketplace, they would be regulated by FERC. The transmission facilities used in interstate commerce are also regulated by FERC.

Representative Eskridge said he is increasingly concerned that because of the lack of a transmission planning authority we are running into bottlenecks and lack of transmission for new generation. He asked where the regional power council is with regard to this planning. They have been in existence since 1981 and their charge is to develop a regional power plan that meets the needs of the region. He said it was his assumption that this also includes transmission. **Mr. Silverstein** said that the Northwest Power Planning Council has limited authority in the transmission arena and there are very few references to transmission in the power act. Every power plan the council develops has a brief section on transmission. In his opinion this council is probably not well suited to deal with transmission. One issue they are taking on is regional adequacy assessments. There needs to be an entity that can deal specifically with the unique needs of operating and developing transmission.

Representative Eskridge asked if there is a regional transmission planning authority, how can that be implemented in terms of construction across jurisdictions. **Mr. Silverstein** said that is a big challenge. The first step, once this authority is formed, is getting transmission owner/operators to make investments. In his opinion if these investors had the guarantee that their costs would be recovered, either because the money is provided up front or through long term contracts, they would be willing to make that investment and go through the siting process according to state and federal laws including the right of eminent domain if necessary. He said the challenge will be getting the plan implemented once it is developed. He said it is his belief that once the organization is formed, it will have the confidence of the various stakeholders, and why would a utility not do what the organization recommends. **Representative Eskridge** asked if the entity would have the power of eminent domain or condemnation. **Mr. Silverstein** said the authority would not actually build transmission. It would go back to utilities to do that. This would be a somewhat independent group to do the planning to make sure it is done on a fair and equitable basis. It would not have the right of eminent domain.

Representative Cannon asked for more information regarding who the other players in the region would be. **Mr. Silverstein** said this proposal assumes that once the transmission organization is formed, resource planning for investor-owned utilities would be governed by the PUC and each of the states would do the same thing for their regulated utilities. PacifiCorp, that is located in seven jurisdictions would have to submit their resource plan to each of those seven states. Consumer-owned utilities have their own boards to behold to and there are state regulations as well. This would require that the states agree on some sort of common timing process so they all reach the finish line at roughly the same time.

Representative Eskridge said this assumes that the builders of transmission would be utilities with condemnation power. **Mr. Silverstein** said that was correct. **Representative Eskridge**

asked if there was an entity in Washington state that needed a resource that was located in Wyoming, and Idaho Power did not have transmission available, would Idaho Power be able to condemn land in Idaho to build transmission lines. **Mr. Silverstein** said he did not believe that could happen.

In response to a question from **Senator Werk**, **Mr. Silverstein** said that Western Electricity Coordinating Council includes Alberta, British Columbia and the northern part of Baja, Mexico. British Columbia has signed on to the Gridwest proposal and Alberta has been in and out of it. He said it is clearly understood that our neighbors to the north are electrically connected and are an important part of the energy picture.

Mr. Russell Westerberg, PacifiCorp, introduced **Ms. Carol Hunter, Senior Vice President, Utah and Idaho PacifiCorp and Mr. Bradley Williams, Director of Transmission and Distribution (T&D) Asset Management, PacifiCorp,** to discuss prototype batteries and other new technology. Their complete presentation is available at the Legislative Services Office.

Representative Eskridge explained that **Speaker Newcomb** requested the committee hear this presentation because he had heard of a concept where storage batteries are used to reduce transmission constraints by storing energy beyond the constraint.

Ms. Hunter said the presentation will also cover some other new technologies the company is working on to help with transmission distribution in total. She stated that many people look at the system and assume power is provided that same way it was 50 years ago because there are still poles and wires in the sky. She said technology has hit utilities and PacifiCorp is finding new ways to utilize that technology moving forward.

Ms. Hunter said PacifiCorp has about 1.5 million electric customers in six Western states with a service territory covering over 160,000 square miles. She said this gives PacifiCorp an advantage as a utility, regarding any possible application or combination of applications including new technologies, as issues arise on this massive system.

PacifiCorp has 8,300 megawatts of generation capacity from coal, hydro, gas-fired combustion turbines, geothermal, co-generation and renewable wind power. They have 6,400 employees in the United States, headquartered in Portland, Oregon.

She went on to say that technology for PacifiCorp is driven by some very critical factors including:

- Improve Reliability
- Reduce Costs
- Smarter Business Decisions

PacifiCorp participates in a number of Technology Alliances

- NW GridWise Test Bed (BPA, PGE, PacifiCorp, & PNNL)
- NEETRAC - National Electric Energy Testing, Research & Applications Center

- DSTAR - Distribution Systems Testing, Application and Research
- UCAIUG – Utility Communications Architecture International Users Group
- NEEA – Northwest Energy Efficiency Alliance

PacifiCorp T&D Technology Demonstrations
- Remote Faulted Circuit Indicators / Line Sensors
- Distribution Automation
- Grid Friendly Appliances
- Lighting Load Control (DSM Program offered in Utah)
- Battery/Energy Storage

Ms. Hunter said there is a lot of technology out there and more is coming every day. The idea is to hit the center where the technology is associated with sensors, intelligence, equipment, communication and integration. This provides a more reliable system at a lower cost with the ability to make better decisions.

Ms. Hunter went on to discuss the T&D Technology demonstrations in more detail.

Remote Faulted Circuit Indicators and Line Sensors
- Application – Critically Loaded Assets
- Load Profile Data if SCADA not available

She explained that traditionally when they have had critically loaded equipment they have had to take a look at SCADA. This is technology that allows information to be garnered from the system on what the loading is on a real-time basis. The problem with SCADA is that it is extremely expensive and takes weeks to install and there has to be a communication infrastructure to support it. These line sensors are much more cost-effective as shown below.
- Cost-Effective GridSense LINEtracker sensors.
  - Capital: $8,000 vs. a min. of $150,000
  - Installation: hours vs. weeks
  - Communications: cell phone vs. communications infrastructure

Her presentation included charts showing how these line sensors work to measure load. These also allow the company to look at the shape of the daily profiles and maximize the use of load control versus the cost of providing or supplying the energy.

Distribution Automation
This pilot program is located in Sandy and Holladay, Utah, with six high-outage rate or sensitive circuits. This system uses intelligent switches and substations to automatically restore load from an alternate source. Dispatch is immediately notified of faults, or switch status changes and the load transfers automatically if safety constraints are met.

Grid Friendly Appliances
Mr. Williams explained that this pilot project is taking place in Yakima, Washington, and is a good example of joint planning. This project is part of the Pacific Northwest GridWise Testbed Projects. The participants include:

- U.S. Department of Energy
- Bonneville Power Administration
- PacifiCorp
- Portland General Electric
- IBM
- Whirlpool/Sears
- Mason County PUD #3
- Clallam County PUD #1
- Pacific NW National Laboratory
- Invensys
- Celerity
- Preston Michie Associates
- Dr. Lynne Kiesling, IFREE

Mr. Williams said this is a combination of technology and applications where there are constraints. One area where technology is being implemented is in the Olympic Peninsula. This is actually combining with real-time constraints on transmission as well as resources. This also includes some real-time pricing to see how customers respond to a different pricing mechanism.

Mr. Williams said that the point of the Grid Friendly Appliance is to put a relay on large commercial and/or consumer-owned appliances. This relay fits into the appliance itself and trips out the load coil or large compressor of an appliance if the frequency of the power serving the appliance gets outside of the bands of that frequency.

The point of this project is that if there is an event, it will be relatively transparent to consumers because the dryer will continue to spin but the heater coil or major load component will stop. The idea would be that in a number of minutes the frequency would be restored and the coil would kick back in. This has tremendous impact to the grid.

Mr. Williams explained that initially this simply monitors the line and trips it out when there is a major event. Once this technology is accepted and embraced, there could also be a two-way load control type of a device.

Senator Gannon said this is triggered only if a major event occurs. He said he only remembers one major event in his lifetime that happened in Southern California where they dropped the load. He asked if putting this device in all appliances in the U.S. is efficient. **Mr. Williams** said the point is that utilities have underfrequency load shedding today and there are events that occur today that this would take care of. He said utilities are going to respond to major events regardless of this with underfrequency load shedding, which opens up substation breakers and blacks out entire regions. The point of this project is that major events or blackouts would never be seen if there is enough penetration of these appliances. This also provides capability for a two- way demand/response program. **Senator Gannon** asked how often frequency shedding happens. **Mr. Williams** said about once a year. **Senator Gannon** clarified that if these appliances were in place this would not happen as often. **Mr. Williams** said hopefully it would

never happen.

Senator Gannon said this seems to be a pretty major idea if it is going to require every appliance have these chips. He asked if this forestalls the idea of rolling blackouts and so on. **Mr. Williams** said he did not know. **Senator Gannon** said he does not see the significance of making this mandatory on a national level based upon the fact that only two areas have had disasters. **Ms. Hunter** said the purpose for the pilot is to see what the benefits are, what are the costs and what are the social implications. All of those issues need to be addressed by the utility. She said at this point in time the technology is new enough that they are not even sure it is worth answering the other questions. The customers involved in this project right now are being compensated so it can be tested. She said this may be a technology that provides a lot of benefits but they could also decide that it was a good study but that it is not the right time for the technology.

Mr. Silverstein noted that the Northwest has excess generation but that Arizona and California have events every summer. He said such events could begin to happen in this area in winters, as we lose capability from the hydro system. This would be a good safety net to have in place. He noted that currently this project is just focused on underfrequencies which are rare systemwide events. The next step will probably be to include low-voltage or under-voltage load shedding that is something that happens much more regularly and is a significant risk here in the Northwest. This is just the first generation of chip. Eventually the chip might be able to respond to a remote control signal so that if a utility sees a problem, it can send a signal to the appliance to shut it down to protect the neighborhood or city or even a whole region.

Commercial Lighting Program

Ms. Hunter explained that this program is known as Load Lightener. This is a program that is being implemented in Utah that involves new light that can reduce the voltage and save customers about 3% steady-state. It can also save companies an additional 25% in certain hours for load control. She explained it is a load control program that also improves lighting efficiency without losing light quality. She said they should have more information by this time next year on what the take-up rate of this particular program is with commercial customers.

Battery/Energy Storage

Ms. Hunter said this is what started the conversation regarding technology and PacifiCorp. She said regarding distributed generation or distribution application such as energy storage batteries, PacifiCorp has taken a look at where the application is the most cost-effective. In her opinion this is a very critical issue for the batteries.

Distribution utility applications that are best suited to distributed electricity storage include:

- High loading - existing infrastructure at full capacity
- High costs to increase capacity and/or build transmission
- Slow to moderate load growth to leverage best asset deferral benefit
- Feeder voltage/reactive power (var) support needed
- Difficult access to stable fuel sources

- Difficult permitting process for new lines, substations, or DG combustion engine emissions

Her presentation includes charts that show specific hours during a day where they are trying to compensate for lack of capacity on distribution or transmission. It also includes specific examples of where this program is being used or considered.

Ms. Hunter closed with the following T&D technology application keys to success:
- Focus on best applications – start with limited functionality, then add incrementally, based on need and customer value.
- Work through technology issues – stick with the strategy and communicate often to stakeholders (both success and setback).
- Develop workforce skills and processes for efficient operations and maintenance of the technology.
- Reliability and availability – must be there when we need it!
- Site and access considerations – customer's premise, proximity to lines, or substation. Work with local community!
- Cost – capital and O&M (life cycle) – optimize efficiency, minimize maintenance requirements.
- Must have utility champions and committed vendors

Ms. Hunter noted that this is the T&D work being done and it is totally focused initially on reducing costs and improving reliability. Their presentation was to just give an idea of how that technology is being used. The idea is to continue to look for ways to integrate that in a cost-effective manner and address any social or institutional issues as this moves forward.

Representative Eskridge commented that as the discussion on transmission continues, batteries and technology that allow us to avoid bottlenecks is promising. He said that while everyone is working toward efficiencies and less cost, it seems apparent that our transmission system is not adequate and there is concern of getting it to an adequate position to serve the needs of customers. In order to do that, these other methods are being developed to minimize the disruption to the customer while at the same time turn off the load. In his opinion the issues include efficiency and capacity.

Mr. Neil Parekh, Program Manager, Pacific Northwest Economic Region (PNWER) was the next speaker. His complete presentation titled "A Comprehensive Approach to Bi-National Regional Energy Planning in the Northwest" is available at the Legislative Services Office.

Mr. Parekh explained the structure of PNWER as follows:
- Chartered by the Northwestern states of Idaho, Montana, Washington, Oregon, Alaska and Western Provinces of Alberta, British Columbia and the Yukon Territory in 1991
- State/Provincial Legislators and Representatives of the Private Sector
- Governors' and Premiers' Representatives

Issues faced by PNWER include:

- Tourism - Promoting the 2010 Winter Olympics in Vancouver
- Homeland Security - Tabletop Exercises in Critical Infrastructure Protection
- Border Issues - Passport Requirement to Cross the Border
- Energy - Regional Energy Planning and Coordination

Mr. Parekh said the PNWER has funding from the Department of Energy to engage in regional energy planning and coordination. This is called the Bi-National Regional Energy Planning Initiative.

There is also an Energy Chairs/Ministers Task Force including members from the U.S. and Canada. All of these lawmakers have been gathered to look at legislation on facility/transmission siting. They have asked PNWER for more and better information about the region's energy future. This Bi-National Regional Energy Planning Initiative is a result of that.

Mr. Parekh explained the concerns of the initiative include congestion in the regional electric grid. He stated that current and future congestion in the Western Electrical Grid and obstacles to the delivery of other resources (e.g. natural gas, petroleum, etc.) will hinder economic growth in the Pacific Northwest. His presentation includes a map showing congestion in the Pacific Northwest similar to **Mr. Silverstein's** presentation. **Mr. Parekh** said PNWER's concern is not just that there is congestion but what the implication of that congestion is and the impact it will have on our economy.

Mr. Parekh went on to say that another concern is future capacity deficits. This is the difference between load growth and resources that utilities are facing in the next several years. He noted that **Mr. Silverstein** has said there may be a slight surplus in the Northwest but that surplus is lost over the next few years. According to an analysis by Lawrence Berkeley National Laboratory, many of the utilities in the Pacific Northwest will experience significant capacity deficits in the near future.

Mr. Parekh showed an example of Avista's 2005 Integrated Resource Plan showing that while the load growth to 2025 continues to increase, the resources remain relatively flat the entire time. This is about a 600 megawatt deficit.

Mr. Parekh explained that siting and permitting require working with a range of local, state, provincial and federal authorities and agencies, each with their own unique process for identifying and utilizing appropriate transmission corridors. This is a concern when working within a state or province and when working between states and provinces.

He mentioned the Northern Lights Project that is a 1,100-mile HVDC transmission line linking Montana and the Southwest down to Las Vegas and California. There are plans to serve new generation and load in Idaho.

He said PNWER has been asked by legislators in other states how to assess a project like this

that is regionwide. He stated that projects like this must be supported by state governments. This means state legislatures are going to be called on to pass judgment on projects like this and others. The question is do they have the information they need to make these decisions. PNWER hopes to be able to address that going forward.

Mr. Parekh said that if transmission corridors are not sited and built, we will be unable to connect renewable sources of energy (e.g. wind) to the load centers. The concern is that we will have to continue to rely on more expensive gas-fired generation that is built close to load.

The Bi-National Energy Planning Initiative goals include:
- Facilitate Region-wide Data Sharing
- Facilitate Region-wide Transmission Corridor Planning
- Encourage More Unified Permitting
- Provide Reliable, Accurate, and Comprehensive Information
- Enable Cross-border Strategic Planning
- Facilitate Economic Growth

Objectives include:
- Design a periodically updated aggregated IRP Review
- Establish a Pacific Northwest Energy Planning Council consisting of regional public/private stakeholders from both Canada and the United States
- Serve as a resource to Energy Committees/Ministries throughout the Region

Mr. Parekh went on to discuss Section 368 and Section 1221 of the 2005 Energy Policy Act.

Section 368 - Energy Right-of-Way Corridors on Federal Lands "West-wide Energy Corridor PEIS"

He explained that the Department of Energy, Bureau of Land Management and the Forest Service held a series of meetings in the 11 western states recently. The meeting was held in Boise on November 1. This is an effort to identify energy corridors on federal lands only. This is a one- stop shop; if they identify a corridor, they will be included in the land-use plans for the land management and forest service and other agencies that have land out here. They are looking for specific corridors, what the width would be and what compatible uses for the corridor would be. **Mr. Parekh** said that public comments for the first phase are due November 28, 2005. A draft of the PEIS will come out in the spring, 2006, and the final document will be available in August, 2007.

Mr. Parekh explained that PNWER has traveled to meetings in Helena, MT; Boise, ID; Portland, ORE; and Seattle, WA; and gathered information in order to be able to educate people on who was saying what and what the instructions were. They have shared that with energy chairs and staff throughout the region. PNWER also recently facilitated a conference call with representatives of the energy ministries and private sector representatives in Canada to make sure the energy corridor British Columbia is planning lines up with what the U.S. Government is planning. He said it does not make sense to have the corridors miles apart.

Mr. Parekh said PNWER will be offering official comments on this. One point that will be strongly emphasized is that the federal government coordinate more closely with state legislators throughout the region. He said, unless he is mistaken, the impression they got was that state legislators were not as involved in the process as they could have been or should have been.

Section 1221 - Siting of Interstate Electric Transmission Facilities Designation of "National Interest Electric Transmission Corridors"

Mr. Parekh said this process is based on a congestion study being conducted by: SSG-WI, WECC, NTAC, SWAT, STEP, RMATS, CCPG and CREPC that is due June, 2006. He explained that these acronyms represent some regional transmission groups that do studies on congestion in the entire western region. He said the congestion study will form the basis for identifying these national interest corridors. In addition to congestion, the secretary can look at whether a corridor facilitates diverse resources or if it is in the national interest or helps with national energy security. Once these corridors are identified, this is where the FERC backstop authority comes into play. **Mr. Parekh** quoted from the bill:

- *"If any agency has denied a Federal authorization required for a transmission facility, or has failed to act by the deadline established by the Secretary pursuant to this section for deciding whether to issue the authorization,* ***the applicant or any State in which the facility would be located may file an appeal with the President****, who shall, in consultation with the affected agency, review the denial or failure to take action on the pending application."*

Mr. Parekh explained that if these are not approved within one year, FERC can come in and approve them. This is not something that people are taking a liking to.

He went on to say that there is a way out of this known as a Multi-state Compact. If three or more states come together and form a compact, the FERC backstop authority can be overridden. It is worded as follows:

- *"The Commission shall have* ***no authority*** *to issue a permit for the construction or modification of an electric transmission facility within a State that is a party to a compact, unless the members of the compact are in disagreement…"*

Partners and stakeholders in this effort include:

- Northwest Power and Conservation Council
- Public Utilities Commission
- Investor-owned Utilities
- NTAC, SSG-WI, WECC, WIEB, CREPC, etc.
- British Columbia Transmission Corporation
- Alberta Electric Systems Operator
- Bonneville Power Administration

This includes regional support from legislators in the states of Washington, Montana, Idaho and Alaska. He noted that Representative Jeff Morris from Washington has legislation prepared to give Washington State's facilities siting commission funding to meet with colleagues in Oregon

and Idaho to facilitate that interstate dialogue. There is also regional support from ministers in Yukon, British Columbia and Alberta.

Mr. Parekh closed with a quote from the Secretary of the Department of Energy dealing with the importance of Bi-national planning.

- *"As both the blackout and our subsequent close cooperation demonstrate, neither of our nations can address its energy concerns alone…*

- *Today, there are 35 cross-border natural gas pipelines, 22 oil- and petroleum-product pipelines, and 51 cross-border electric transmission lines that bind us together and increase the energy security of both our countries."*

He told committee members that for PNWER to fulfill its mission, legislators need to ask for any information they need.

Representative Smylie commented that with regard to the federal energy legislation in areas of transmission, it looks like the energy bill will trump some of what the states can do. He asked if that was correct. **Mr. Parekh** said if the transmission line that is being considered by a state authority is in a national interest corridor and the state authority does not approve the proposal, the federal government could get involved. It is not guaranteed to trump the state but it could.

Senator Hill asked what PNWER is doing for other states that it is not doing in Idaho and what should Idaho ask of them. **Mr. Parekh** said the role PNWER can play regarding the corridor process is to help make sure the right people in Idaho communicate with the right people in Oregon and Washington and so on. In looking at Integrated Resource Plans, PNWER is looking at getting the managers of the IRPs for each utility together to talk about that developing process. If that happens and legislators have questions for the utilities regarding the process, PNWER can get those questions into that meeting, collect the answers and funnel them back to legislators and others. He said PNWER's biggest role is to share information back and forth and to let people know what work is being done throughout the region.

Representative Eskridge asked what the reaction has been from the public at the statewide meetings with DOE. **Mr. Parekh** said to keep in mind the disconnect between expectations and the intent of the meetings. The intent of the meetings was to tell people what was in the federal register and to take public comments. In the meetings he attended most people wanted to know what it was they were supposed to comment on. There was no map showing the corridors so they did not get a lot of comments. In the next phase where maps are available and there is a draft plan, is where people will be more engaged in the process and make more comments. **Mr. Parekh** said their concern is that there is not a guaranteed public meeting process involved in the next phase. Open meetings may or may not be held, comments might just be taken over the web. When PNWER submits their comments, they will strongly encourage an open dialogue around these corridors so people can get involved in the process. **Mr. Parekh** said he does not think the process will fail.

Representative Eskridge said there have been comments from Commissioner Schneider in Montana that any East/West line from Montana to load centers on the West Coast would not happen. He asked if that is an indication that Montana will not be a player in any kind of regional transmission plan. **Mr. Parekh** said he thinks **Commissioner Schneider** was alluding to the fact that there was so much controversy 30 years ago involving transmission out of Coalstrip that there would be no way to do it today. **Mr. Parekh** said he did not get the impression that the Commissioner was speaking from a policy point of view. His other comments were that more people, including environmental interests, will be heard from later in the process.

Mr. Randy Lobb, Utilities Division Administrator for the Idaho Public Utilities Commission (PUC) was the next speaker. He was introduced to discuss the PUC's perspective regarding transmission. He noted that he was presenting on behalf of the Commissioners who were all out of town on business and that his comments are based on those provided by Commission President Paul Kjellander to the Department of Interior at its Transmission Corridor workshop held two weeks ago. He also distributed a map showing the transmission network in the Northwest that is available in the Legislative Services Office. He said this map shows, particularly in South Idaho, where the load centers are, and the fact that these load centers are right in the middle, with transmission constraints from the Northwest hydroelectric system to Boise and from the coalfields in Wyoming and Montana to Boise. It shows significant distances between those areas.

Mr. Lobb said, with that in mind, the Commission believes that transmission is essential to our future resource planning because:

- Electrical loads in Idaho and the rest of the Pacific Northwest continue to increase due to population and economic growth.
- Changing weather patterns and competition for water have impaired hydropower production.
- The West, and the Northwest in particular, are characterized by massive distances between fuel resources for generators and population centers.
- The solution in the past 15 years to build natural gas-fired generators close to load centers has lost its luster as natural gas prices soar.

In a recent order issued by the Commission on an Idaho Power IRP case, the Commission said "we are concerned about the possibility of over-reliance on natural gas peakers as a fall back position due to a lack of transmission capacity." The Commission went on to say: "the Company should expand its 2006 IRP to include an analysis of possible transmission projects, associated costs and the potential risks."

Mr. Lobb said the Commission pointed to the Company's conclusion that coal generation costs are equal when comparing transmission to coal transport costs. Yet transmission may have advantages by offering well-defined fixed cost, improving the range of supply-side options, and producing revenue.

The Commission also recognized that including a transmission component in various supply-side resource alternatives could improve evaluation of competing resource proposals.

The Commission concluded that transmission upgrades may provide benefits by expanding the number and type of resource options available.

Mr. Lobb said that the Commission has not addressed the issue of statewide siting authority but it has supported establishing transmission corridors. The question is what are the benefits of establishing transmission corridors on federal and perhaps state lands.

The Commission thinks first of all establishing these federal corridors could reduce project risk. It should come as no surprise that major transmission projects have considerable investment risks.

- These projects have long lead times - 5 to 10 years from inception to completion.
- The cost per mile in the west can range from $500,000 to $2 million depending on terrain, land use and permitting; and of course these costs are higher in and around urban areas.
- It is also not surprising that there is a reluctance on the part of lenders to loan without certainty of project completion and cost recovery.
- Without some standardization and certainty regarding federal/state transmission corridors, there is the potential for piecemeal, one-transmission-owner projects that serve limited geographic areas...resulting in projects that do little to resolve region-wide transmission problems.

According to **Mr. Lobb,** federal transmission corridor designation can help mitigate project risk, facilitate investment and encourage regional solutions.

Additionally the designation of such corridors:

- Would provide certainty of federal land availability for new projects.
- Would be less costly than having to negotiate corridors agency by agency.
- Would give developers/transmission owners the opportunity to propose more efficient transmission projects to more effectively meet local and regional needs.
- Would encourage multiple participants in multi state transmission projects crossing both federal and nonfederal lands.

He said that ultimately, the Commission's concern is with regard to the impact on Idaho ratepayers. Costs of transmission projects are borne by ratepayers through regulated rates over the life of the project.

- Designation of both existing and new energy corridors on federal lands could streamline the permitting process, reduce construction time and lower project costs to consumers.
- Additionally, federal/state agencies should consider standardizing siting/permitting processes and establishing consistent fee structures for land use in order to eliminate unfair treatment and provide greater cost certainty to ratepayers.

- Timely additional transmission will broaden the array of possible generation projects and reduce costs ultimately passed on to customers.

Mr. Lobb noted that many of these comments have focused on transmission corridors through federal lands. Yet, the ability to site transmission on state lands is also important. Transmission corridors on state lands must correspond with those on federal lands to assure that the efficiencies of establishing corridors are achieved and that the benefits of expanded transmission are realized.

Representative Eskridge said this transmission corridor activity by the Department of Energy takes into account corridor planning over federal lands. He asked what ability would the federal government have to dictate what is done on state lands in terms of a transmission corridor. **Mr. Lobb** said it is his understanding that this would coordinate the federal agencies on federal lands. Federal authority over state lands is unclear, and he is not sure whether they would have authority at all. It seems that the point is for the various federal interests; BLM, Forest Service and other land management agencies to coordinate in their review of proposals across federal lands. If federal corridors are established, it makes sense to have state corridors that match up.

Representative Eskridge asked what Idaho's ability would be to determine siting on state land. **Mr. Lobb** said that depends on who controls the state property. **Mr. Nugent** said it would depend on what parcel of state land was involved. If it was endowment land or if it was deeded to the state through the admissions act and so on. If it was school land or endowment land, the State Land Board would be involved. **Representative Eskridge** asked if the federal government would be able to preempt state decisions. **Mr. Nugent** said he would think not, especially if it was school endowment lands because that would require Congress amending the State Admissions Act. **Mr. Parekh** said if there were two federal corridors established with state land in the middle, there could be a lot of pressure on the state to designate that land as a corridor to connect the two federal corridors. He said that these efforts, including the discussion on federal lands and the national interest corridors, are meant to facilitate the siting of transmission to make it easier. The concern is where that decision making is taking place. Right now in some areas it is taking place at the city or county level and not at the state level. **Mr. Parekh** said by forming a compact that can be done on a regional level. He said he did not know if it is a good idea to have it done completely on a national level where they are not responsive to local concerns.

Mr. Russ Hendricks, Idaho Farm Bureau, was introduced to discuss Idaho Grown Renewable Fuels. He stated that the future has never been brighter for renewable fuels across the nation. There is solid support from Congress and President Bush as shown by the overwhelming vote on the Federal Energy Bill. There are provisions in the energy bill that ensure that at least 7.5 billion gallons would be used by 2012, with 250 million cellulosic ethanol. He said Idaho has the same opportunity.

Mr. Hendricks said there are literally hundreds of reasons to support biofuels but they can be broken down into three main categories.

Rural Economic Development
The reason Farm Bureau members are interested in development of biofuels is because it puts more money in Idaho farmers' pockets. There are two ways this happens or two different ways of producing ethanol. The first is to use crops (corn, wheat, barley, milo). This technology has been around for many years. Throughout the Midwest, studies have shown that when an ethanol plant moves into an area, that creates additional demand for the grain and there are higher prices to the farmers in the local areas, whether they sell to the ethanol plant or not.

Another interesting happening is that through bio-engineering, new varieties are being created for use in the ethanol industry. Monsanto has some specific lines of corn that are higher in starch content that have been developed specifically for ethanol production. Several of those lines are short season varieties that are drought tolerant and can be produced in Idaho. Eastern Idaho has been conducting field trials on this corn for the last two years and they have done very well.

There is also a new technology that does not use the grain but uses the residue from the crops (straw, cornstalks, grass straw) for the ethanol production. Iogen, a Canadian Company, has a test facility in Ottawa that has been running 40 tons of straw a day through their test facility and Eastern Idaho came up at the top of their list because it has a stable supply of straw due to all the irrigated acres of barley under contract in the area.

Other companies that are looking at producing ethanol from cellulose include Abengoa, ADM, Novazymes and others. During the Eastern Idaho legislative tour it was stated that cellulose-based ethanol can be produced for $1.25 per gallon. This is still more than grain-based ethanol but it is dramatically reduced and it will eventually be cheaper.

Mr. Hendricks said a feasibility study done by the Idaho Department of Water Resources Energy Division shows rural areas also benefit from this technology.

If Idaho was to produce 60 million gallons of ethanol, that would provide:
- 88 production jobs
- 1,115 support services jobs
- $36.8 million annual wages

This would also increase the local tax base as follows:
- Nearly $100 million capital investment
- Around $2 million annually in property taxes
- Over $200 million in increased economic activity annually
- Approximately $8 million in state income taxes

Increased Fuel Security
Mr. Hendricks stated that there is no oil in Idaho. The state imports every single drop that we consume. Currently oil is delivered to Idaho through one major pipeline in the southern portion of the state and two terminals at the northern part of the state in Missoula and Spokane.

He said with our gasoline purchases nearly $1.3 billion annually leaves Idaho. Ethanol gives us the opportunity to grow some of our own fuel, keep some of those dollars in Idaho and generate economic activity. The added bonus is carbon sequestration. As renewable fuels are used, not only do the crops sequester that carbon into the ground, but less carbon is released into the atmosphere in the burning of that fuel. The carbon that is released is recycled carbon. This would significantly reduce our dependence on imports and reduce fuel costs. One study done about 1 ½ years ago showed that 3.4 billion gallons of ethanol used nationwide stretched our fuel supply and reduced the price for every gallon of gasoline by 30 cents per gallon.

Improved Air Quality

Mr. Hendricks stated that the use of renewable fuels improves air quality because oxygen is included as a component of the renewable fuel. As the renewable fuel is mixed with conventional fuel, the extra oxygen helps the fuel burn more completely. Every vehicle that uses renewable fuel shows immediate reductions in emissions as follows:

- Up to 35% reduction in CO
- Up to 50.3% reduction in primary PM2.5
- 25% reduction in Benzene and VOCs
- 21% reduction in total toxics

Mr. Hendricks said that simply by changing our fuel mixture, it is like magically removing 1/4 to 1/3 of vehicles. This has been proven in dozens of urban areas in the U.S. as part of their EPA- approved plan to meet clean air act requirements. **Senator Hill** asked if those reductions are seen with an ethanol blend. **Mr. Hendricks** said that was with a 10% blend. He noted that the most significant reduction is on highest-emitter vehicles.

Mr. Hendricks presented a slide that was prepared by DEQ that shows how they look at emissions. Currently there is a certain amount of emissions from vehicles, households and so forth, and there is a certain amount from business and industry with a little room for growth. He said if we continue on the same path and do not do anything to address the continually increasing number of vehicles, eventually there will be no room for growth. The improved air quality ethanol provides gives us the opportunity to have that room for growth.

Mr. Hendricks went on to discuss the Farm Bureau's proposal. He stated that it is the same thing that was done in other states and Canadian provinces, including Minnesota, Montana, Hawaii, Ontario, Manitoba and Saskatchewan. He said it is his understanding that six other states will be considering this same proposal this coming legislative session including Washington, Oregon, Michigan, Wisconsin, Tennessee and Missouri.

The proposal basically states that gasoline in Idaho will include 10% ethanol.
This is a renewable fuel standard. **Mr. Hendricks** explained that Idaho currently has standards that the gasoline must meet in order to be sold in Idaho. This just adjusts that standard to include 10% ethanol.

He said the proposal suggests that the renewable fuel standards will only go into effect once

there is a 30 million gallon production of ethanol in Idaho. This is a change from last year's legislation.

Mr. Hendricks said this renewable fuel standard is no different from any other health-based standard the Legislature sets.

Mr. Hendricks said the citizens benefit because they get superior fuel and get to continue to use their same vehicles and purchase the fuel at their same gas stations at no more cost. The state wins because it will not cost them any money to implement the renewable fuel standard, they get cleaner air and rural economic development. The rural areas benefit because the farmers get better crop prices and there are jobs and economic activity in those areas.

Mr. Hendricks said a renewable fuel standard is superior to incentives because with incentives the only thing that would happen would be the ethanol production. The cleaner air benefits or the reduction in dependence on imported fuel would not be seen because the branded fuel stations will not allow ethanol into their stations unless they are required to do so. Also incentives cost money and the question is who will pay for those. **Mr. Hendricks** said ethanol can always compete with gasoline. Even if oil went back down to $20 a barrel, ethanol could still compete because of the added octane it adds to gasoline. Ethanol is the cheapest octane that can be added to gasoline. The federal government has provided a reduction in the federal fuel tax that also makes ethanol very competitive no matter what the cost of gasoline is.

Mr. Hendricks said that financial backers of ethanol plants prefer markets over incentives. It was shown a few years ago when states were struggling with their budgets that many states who had incentives in place for the ethanol industry were no longer able to pay them. This left the investors in the lurch who had depended on a certain amount of revenue from those incentives.

He also said if there is no local market, that adds to the costs of shipping and logistical hassles to be able to get the product where it needs to be.

Mr. Hendricks summarized that the renewable fuel standard:

- Provides Rural Economic Development
  - Jobs, Taxes, Better Prices for Farmers
- Cleaner Air Statewide
  - Allows For More Business Growth
- Reduces our Dependence on Fuel Imports
  - Uses Our Own Resources to Meet our Needs
- **Does Not Cost the State Any Money**

Mr. Hendricks distributed RSMPN525 that is draft legislation of the proposal he explained above. He said there have been some changes made to it since last year. The first change he already discussed regarding the requirement that 30 million gallons of ethanol must be produced in Idaho before the renewable fuel standard goes into effect. Another change deals with concerns DEQ raised last year.

Representative Cannon asked if this discussion is leading to the committee voting whether or not to support the legislation. **Representative Eskridge** said the intent is to gather information and to make the committee familiar with the legislation. He said the committee could take action on legislation at a later date, after it has a chance to review it more thoroughly. **Mr. Hendricks** said that was correct. It is his belief that the legislation will begin in the Senate Transportation Committee as it did last year.

Representative Cannon said there is a concern in the transportation community that dedicated funds continue to be eroded. He asked if ethanol is taxed. **Mr. Hendricks** said there is companion legislation that deals with that issue. Currently ethanol-blended fuel receives a 2.5 cent per gallon reduction in the state fuel tax as an incentive to use. This means the Idaho Transportation Department receives about $750,000 less per year. This companion bill would repeal that incentive when the renewable fuel standard would take effect so that there would be no net loss to the state highway fund.

In response to a question from **Representative Smylie** regarding RSMPN524 and a plant located within five miles outside of the border, **Mr. Hendricks** explained that several producer organizations have approached the Idaho Farm Bureau. This specifically looks at two plants located in Oregon that use Idaho producers and feedstock to produce ethanol. This says if the plant is located within five miles of the border, any ethanol that is produced from Idaho feedstock would count toward that 30 million gallons. **Representative Smylie** said that would also mean that Idaho would lose out on the payroll taxes and so on. **Mr. Hendricks** agreed.

Representative Smylie said there are certain limited applications where fuel that does not contain any ethanol is required. He asked if there are provisions for that. **Mr. Hendricks** said he has talked to a group that does comparisons of blended versus pure fuel. He said 30% of the fuel nationwide is ethanol blended, and if there were concerns with engines not being able to use it, that would already be seen. This testing group said there were no compatibility issues and older vehicles might only need slight adjustments to the fuel air mixture screw.

Senator McKenzie commented that one of the mandates of this committee was to make policy recommendations. This legislation reflects a general policy about whether or not we want to promote the development and use of biofuels over reliance on petroleum. In his opinion that is a policy the state should pursue regardless of whether this legislation is used to do that.

Senator McKenzie made a motion that the committee make a recommendation that the energy policy of the state include promotion of development and use of biofuels. Senator Hill seconded.

Representative Andrus said he agrees that the committee was organized to study energy issues that are good for the state and it is responsible to make some recommendations. He suggested in the future the committee might be stronger in making recommendations. The full body is looking for recommendations from this committee because the committee is able to more fully study this issue.

Senator Werk said the general nature of the motion is supportable. He said he has issues with ethanol so he would not necessarily support the legislation, but he does support the motion because it is a general recommendation.

Representative Cannon said he wants to support the motion but he would like to have more time to study legislation before going further. **Representative Eskridge** explained that this motion is not proposing support of the legislation as a recommendation. It is just a general recommendation to support promotion of the development and use of biofuels as part of the state energy policy. **Senator McKenzie** agreed that his motion is meant to be a general policy statement. **Representative Eskridge** commented that motions are appreciated because they give credibility to the committee by allowing them to actually come up with recommendations as opposed to just assimilating the information.

The motion carried unanimously.

Representative Stevenson asked for the reasoning behind the 30 million gallon requirement in the legislation. **Mr. Hendricks** said they believed that amount was politically feasible. It represents about 50% of what would be required for the state to have 10% ethanol in all of our fuel.

Senator Werk asked why the Treasure Valley Renewable Plant that planned to locate in Payette moved to Oregon. **Mr. Hendricks** said it is his understanding that Oregon lured them away with an enticing incentive package.

Senator Werk stated that since the committee name had been changed to Energy, Environment and Technology, he invited **Mr. Jason Crawforth, Founder of Treetop Technologies**, to give the committee an overview of the tech world and what the committee might do to help. **Senator Werk** said Treetop Technologies is a well-known, fast-growing, local computer software and services firm. **Mr. Crawforth's** complete presentation regarding technology companies in Idaho is available at the Legislative Services Office.

Mr. Crawforth said he is a fifth generation Idahoan and a product of Idaho's public and university system. He is a member of the Governor's Science and Technology (S&T) Advisory Council and the S&T Communication Task Force. He is on the Board of Directors for the Boise Chamber of Commerce, BSU's Executive MBA Advisory Board, U of I's Entrepreneurial Advisory Board and Founder, President/CEO of Treetop Technologies, Inc. He said his comments today are made as a private citizen and as President of Treetop Technologies, and may not be reflective of the other boards he serves on.

Mr. Crawforth gave the following background on Treetop Technologies, Inc.

- Founded in Boise, Idaho in January 1997
- IT Services and support company
- 1999-2003 Idaho's fastest growing private company
- 1999-2003 130th fastest growing private company in US

- 1999-2003 16th fastest growing private IT company in US

Mr. Crawforth stated that the definition of science and technology includes more than just programmers and semiconductors. Some of the other companies include Imaging, Power/Energy, Ag/BioSciences and Nanotechnology. Science and technology impacts every industry in Idaho; agriculture, mining, medical/health, security, defense, environment, construction, and it impacts every corner of the state:

- East Idaho: AMI, INL, ISU, Monsanto, Simplot
- North Idaho: Alturas Analytics, U of I
- Southwest Idaho: BSU, Extended Systems, HP, Micron

Mr. Crawforth said the reason for him speaking to the committee is because S&T is suffering in Idaho and in his opinion it is going to get worse. He said that S&T is the largest industry in Idaho and it represents 1/4 of the state's economy. It is bigger than agriculture, forestry and mining combined. S&T represents over 70% of the value of the state's exports. Of that 70%, 75% is based on two companies; Micron and AMI. He said there is starting to be a bit of decline in our technology industry. It had been rapidly growing prior to 2000. In 2002: 1 out of every 10 Idahoans worked in the S&T industry. In 2004: 1 out of every 14 Idahoans worked in the S&T industry.

Based on numbers from the Department of Commerce:

- In 2000: Total S&T workers in Idaho = 47,397
- 2002: Total S&T workers in Idaho = 44,409
- 2004: Total S&T workers in Idaho = 39,825

Based on this final number, **Mr. Crawforth** said that Idaho has lost just over $3 million in tax revenue on income tax alone.

The total annual wages of S&T workers is $2.3 billion. Total annual wages of all Idaho workers is $12.9 billion. (S&T equals 18%). The average S&T worker earned $50,870 while the average Idaho worker earned $27,754 (2002).

Mr. Crawforth went on to say it is a myth that the S&T community is thriving and here to stay in Idaho. He said that was probably true prior to 2000.

When he started Treetop Technologies in 1997, they competed with other states and they did very well. As the world started shrinking they started competing with companies across the globe. His company competed for a project for the Idaho Department of Health and Welfare and were third by 5% to a company that is located in Texas; the second-place company was from India. When he bids on projects, global competition goes way beyond and includes India, China and even Brazil.

He said there is very little depth in our technology sector. Without Micron and AMI and HP, the technology workforce is reduced by close to 75%. When companies talk about moving to other places such as Manassas, Virginia, that is a decision that impacts Idaho. He said he has only

hired two Idahoans in the last year and his company's Canadian operations have grown at a much more accelerated rate. He said he has been forced to do this to remain competitive.

Mr. Crawforth noted that companies like Jabil, Zilog and Santa Clara Plastics are also companies that have left Idaho or are leaving. Hewlett Packard just had a massive amounts of layoffs. According to **Mr. Crawforth,** Idaho is losing to places like Manassus, Virginia; Lincoln, Nebraska; Austin, Texas; and Boulder, Colorado, California, Canada, China and India.

Mr. Crawforth said another myth is that Idaho citizens know the impact the S&T industry plays in the Idaho economy. Science and technology is bigger than agriculture, forestry and mining combined and it is not "top of mind" for the average Idaho citizen.

He said that Idaho's initiatives and promotional efforts do not reflect our state's economy. In the Department of Commerce there are 220 full-time equivalent positions supporting and promoting agriculture in Idaho while there are only five supporting and promoting S&T. The marketing budget for tourism in fiscal year 2006 is $2.1 million and it is only $40,000 for S&T.

Mr. Crawforth said a full-page advertisement he and other technology companies in Idaho placed in the Wall Street Journal last year to support their companies cost $120,000 for one day. Any paper in California contains advertisements daily from companies in other cities and other states. Idaho companies do not have the budget despite having a world-class team of public relations writers.

Not being able to actively market and promote their companies makes it hard to attract and retain qualified workers. He added that almost anyone in the industry takes a pay cut to move to Idaho.

Mr. Crawforth gave the following solutions:

- Legislative attention on the S&T community
  - Bring in industry executives
  - Align efforts with the state's strengths (clustering)
- Increase funding to promote S&T industries
  - Increase the Office of Science and Technology's budget
  - Leverage PR efforts
  - Professional marketing campaign
- Increase support for S&T students/workers
  - Support transformation of universities
  - Provide educational reimbursements for top 10% of S&T students that stay and work in Idaho for 5 years.
- Increase funding for technology centers and incubators

He said that other people in the industry will say the same thing he is: the industry is struggling and is shrinking in Idaho. His company is no longer Idaho's fastest-growing company; it is shrinking and has less people now than at the beginning of the year.

Senator Werk commented on the disparity between the full-time equivalent positions and money spent for agriculture versus S&T. He asked if the S&T spending is totally encompassed within the Office of Science and Technology. **Mr. Crawforth** said he was not sure but the entire Science and Technology office is less than 5 people with a marketing budget of $40,000. **Senator Werk** stated that our Office of S&T cannot even go to major trade shows across the country to support Idaho's S&T industry. There are some Techconnect centers across the state that are run on very minimal state budgets that help to become incubators for entrepreneurs. He said he tried to get $75,000 for these centers from JFAC last year and was unable to do so. He said from his perspective the state needs to start looking at what it can do to broaden and deepen our technology industry. His concern is how thin the state's technology industry is, and how important it has actually become to our economy. He emphasized that average wages in the S&T field are more than double the average wage of every other industry in Idaho.

Senator Hill asked if there has been any research done regarding what the City of Boise or Ada County is doing to support technology. He said one reason agriculture gets more funding is because it involves 42 of 44 counties in the state. **Mr. Crawforth** said the Boise Chamber has had articles published Inc Magazine and US News and World Report to help promote this area. The technology industry in Idaho was also ranked very high in Forbes magazine. Technology is so broad, different companies need different things. He said the Department of Commerce and the Boise Chamber were very helpful to him in helping with the Wall Street Journal advertisement. He said legislation was presented last year by **Representative Moyle** to help attract smaller companies and allow to purchase office buildings and such. He said the problem with this was that companies such as his do not actually purchase buildings, they rent space. This is because most start-up businesses are trying to remain cash rich.

Senator Hill said many cities and other states send representatives to national S&T conventions. He asked if local governments in Idaho are doing that. **Mr. Crawforth** said not that he is aware of. He commented that he realizes that S&T is concentrated in some areas of the state but all of the employees of these companies pay state income tax that greatly affects the entire state. His company alone paid $800,000 in state taxes last year. He said his company would be better off being located in Nevada but as a 5th generation Idahoan, he wants to stay here if at all possible. He said in two years his company will probably not be here.

Representative Smylie commented on the marketing campaign focusing on the Treasure Valley the Boise Chamber is working on. He said most legislators are pro business and want to do what they can to promote economic growth and businesses. He asked where does the priority need to be for promotion of these companies; marketing and promotion, establishing infrastructure or improving education. **Mr. Crawforth** said all of those things need to be done. In his opinion the Governor should be calling up other companies and promoting our state. He said we do need a critical mass in the area and we are losing that.

Representative Smylie said the legislature needs to know what needs to be done. He asked if there is anything more the state can do. **Mr. Crawforth** said promoting the image of Idaho would be probably most helpful.

Senator McKenzie asked what Nevada is doing that Idaho is not, that would make him want to locate his company there, and what is Manassus doing to get Micron there. **Mr. Crawforth** said he did not know the details of Micron. From his standpoint, Nevada has lower taxes, as does Texas. This would allow him to be more competitive when bidding for contracts.

Representative Nonini mentioned Jobs Plus, which is a privately funded organization that travels around the country to promote businesses in northern Idaho. He asked if there is anything like that in this area. **Mr. Crawforth** said he is not aware of anything like that. **Representative Nonini** said Steve Griffiths is the head of this organization and suggested **Mr. Crawforth** contact him. He said they have been successful in getting some technology businesses to locate in North Idaho.

Senator Lodge asked why it would be better for him to locate in Nevada. **Mr. Crawforth** said there is no income tax in Nevada. He said the reason he wanted to speak to the committee is just to make them aware that technology is in need of assistance, or it will leave the state.

Representative Eskridge asked if the Department of Commerce actively marketed technology in Idaho, do we have the technology structure or base to support that. **Mr. Crawforth** said Idaho is still one of the lowest-cost places to do business in the U.S. and that is one reason to locate here. He said he thinks Idaho can compete and would be able to support an active marketing of technology, but the Department of Commerce needs a larger budget.

Senator Gannon asked if this was the last meeting before the legislative session. **Representative Eskridge** said he would assume so. **Representative Cannon** said he would like to be informed before the session as to what to expect in terms of legislation. **Senator Hill** said he agreed with that idea and said the cochairmen would be sure to keep other committee members informed. **Representative Eskridge** said the cochairmen talked with **Mr. Jim Yost** in the Governor's office and they seem to be willing to let the cochairs participate in developing energy policy if anything goes forward. **Senator Hill** said it seems that the Governor's office will pursue this actively, and that it will be part of State of the State address. He said the cochairs will keep committee members informed of how this progresses.

The meeting was adjourned at 3:50 p.m.